In the Claims:

Claims 1-51 (Cancelled).

Claim 52. (Previously presented): An *in vitro* method for synthesizing one or more nucleic acid molecules comprising one or more recombination sites, said method comprising:

(a) obtaining at least one isolated linear nucleic acid molecule;

(b) contacting said molecule *in vitro* with one or more adapters which comprise at least a first recombination site or portions thereof under conditions sufficient to add one or more of said adapters to one or more termini of said linear nucleic acid molecule; and

(c) mixing said linear nucleic acid molecule with at least one vector *in vitro* in the presence of at least one recombination protein, under conditions sufficient to cause recombination of said linear nucleic acid molecule with said vector.

Claim 53. (Previously presented): The method of claim 52, wherein said linear nucleic acid molecule is an isolated genomic DNA molecule.

Claim 54. (Previously presented): The method of claim 52, wherein said linear nucleic acid molecule is a cDNA molecule.

Claim 55. (Previously presented): The method of claim 52, wherein said linear nucleic acid molecule is produced by mechanical or enzymatic techniques.

Claim 56. (Previously presented): The method of claim 52, wherein said linear nucleic acid molecule is produced by digesting one or more nucleic acid molecules with one or more restriction endonucleases.

Claim 57. (Previously presented): The method of claim 52, wherein at least one adapter comprising at least one recombination site or portion thereof is added to both termini of said linear nucleic acid molecule.

Claim 58. (Previously presented): The method of claim 57, wherein the recombination sites or portions thereof at both termini of said linear nucleic acid molecule are different from each other.

Claim 59. (Previously presented): The method of claim 58, wherein said recombination sites or portions thereof do not substantially recombine with each other.

Claim 60. (Previously presented): The method of claim 52, wherein said vector comprises at least a second recombination site or portion thereof.

Claim 61. (Previously presented): The method of claim 60, wherein said first and/or second recombination sites or portions thereof are engineered recombination sites.

Claim 62. (Previously presented): The method of claim 60, wherein said first and/or second recombination sites or portions thereof are selected from the group consisting of *att* and *lox*.

Claim 63. (Previously presented): The method of claim 60, wherein said first and/or second recombination sites or portions thereof are *att* sites.

Claim 64. (Previously presented): The method of claim 52, wherein said recombination protein is selected from the group consisting of Cre, Int, IHF, Xis and Fis.

Claim 65. (Previously presented): The method of claim 52, wherein said recombination protein is Int.

Claim 66. (Previously presented): The method of claim 52, wherein said recombination results in the production of a vector comprising said at least one linear nucleic acid molecule.

Claim 67. (Previously presented): The method of claim 52, wherein said at least one linear nucleic acid molecule is a population of nucleic acid molecules.

Claim 68. (Previously presented): The method of claim 52, wherein said at least one linear nucleic acid molecule is a library of nucleic acid molecules.

Claim 69. (New): An *in vitro* method for synthesizing one or more nucleic acid molecules comprising one or more recombination sites, said method comprising:

(a) obtaining at least one isolated linear nucleic acid molecule; and

(b) contacting said molecule *in vitro* with one or more adapters which comprise at least a first recombination site or portions thereof under conditions sufficient to add one or more of said adapters to one or more termini of said linear nucleic acid molecule.